

TREASURY DEPARTMENT
UNITED STATES COAST AND GEODETIC SURVEY

HENRY S. PRITCHETT
SUPERINTENDENT.

BULLETIN No. 38.

ALASKA

HYDROGRAPHIC NOTES, SAILING DIRECTIONS, AND CHARTS OF
SURVEYS RELATING TO THE VICINITY OF PRINCE WILLIAM
SOUND, COOK INLET, KADIAK ISLAND, AND ROUTE
FROM UNALASKA TO CHIGNIK, THROUGH
UNIMAK PASS AND INSIDE
THE ISLANDS.
1897.

By LIEUT. COMMANDER J. F. MOSER, U. S. N., COMMANDING ALBATROSS.

PUBLISHED THROUGH THE COURTESY OF THE FISH COMMISSION.

Bulletins are issued by the Survey from time to time as material for them accumulates. They are intended to give early announcement of work accomplished or information of importance obtained, and will, in many cases, anticipate the usual means of publication afforded by the Annual Reports.

Those already published, Nos. 1 to 25, inclusive, in quarto form, constitute Vol. I; Nos. 26 to 35, inclusive, in octavo, constitute Vol. II; Vol. III begins with No. 36.

WASHINGTON
GOVERNMENT PRINTING OFFICE
1899.

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Prefatory note.—The following information contains hydrographic notes, sailing directions, and charts of surveys made by Lieut. Commander J. F. Moser, U. S. N., commanding the U. S. Fish Commission steamer *Albatross*, during a cruise in Alaskan waters in 1897.

In this locality the charts are far from correct, and these notes are a very valuable addition to the scant information already existing in print on this part of Alaska.

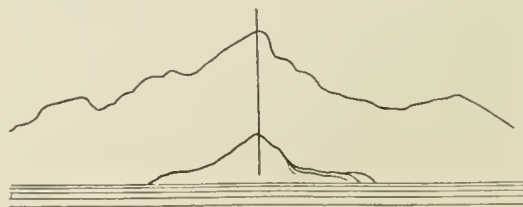
All bearings and courses are magnetic; all distances are in nautical miles.

Chart 8500.—I do not wish to criticise this chart, knowing that it represents an unsurveyed area, but I think it should be known that it is simply a map based for the most part upon sketches. In the run of the *Albatross* from Cook Inlet to Prince William Sound and thence to the eastward the errors were very apparent, and mariners should be cautioned that they can not use this chart as they would a finished survey or even a reconnoissance. From the Chugatz Islands to Cape Hinchinbrook I made no attempt to correct, for the reason that there are no determined points to base corrections on. We had favorable tidal conditions, yet we logged from the Chugatz Islands to Port Etches 30 miles more than the measured distance on the chart. Great caution must be observed in navigating these waters.

PRINCE WILLIAM SOUND.

The safe channel entering is between Montague Island and Hinchinbrook Island, though a good channel exists between Montague and Latouche islands, passing on either side of Green Island; but extending from the latter island, both north and south, are long lines of reefs and rocks, and a local knowledge is necessary in using this channel. The *Albatross* went to Port Etches and thence to Orca and Odiak, and the following notes may be useful:

From Port Etches to Orca and Odiak.—From a point 1 mile off the entrance to Port Etches the *Albatross* steered **NNW. $\frac{1}{2}$ W.** 11 miles; this course headed slightly outside of **Knowles Head**, which is a high, massive, rounded headland, and at a distance seemed to have two islands outside of it, but upon nearer approach the inner one was seen as a point of land. When **Cone Point**, a comparatively low, flattened, cone-shaped headland, forming the western entrance point to Port Gravina, bears **N. $\frac{3}{4}$ E.** steer for it. On this course, which the *Albatross* kept 7.3 miles, the highest part of Cone Point will be seen on range with the highest part of the ridge next back of it.

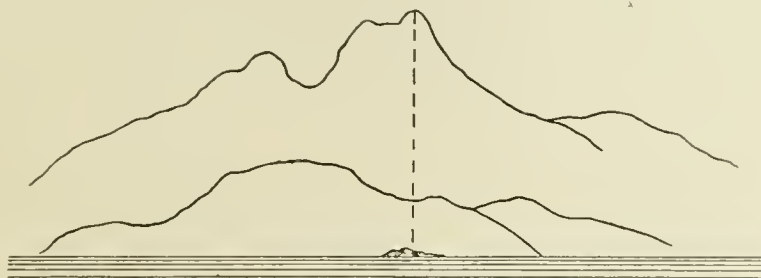


Keep the course **N. $\frac{3}{4}$ E.** until **Gravina Point**, a low, gravelly point, forming the eastern entrance to Port Gravina, bears **NE. by E.** and Knowles Head **NW. $\frac{1}{4}$ W.**; then steer **NE. by E. $\frac{3}{4}$ E.** The *Albatross* kept the latter course 17.4 miles. Gravina Point seems to be bold and has not the islands and rocks around it as indicated on the chart. Inside, and to the westward of the point, is a small, wooded island, with anchorage in 10 fathoms between the island and the point.

CORDOVA BAY.

The northern shore of Cordova Bay must be kept best on board, to avoid a great shoal that makes off Hinchinbrook and Hawkins islands well across the bay. It is said that when the small islet in the passage between these islands shows in the middle of the opening the vessel has reached the point of the most northern extension of the shoal. When abreast of Sheep (or Jackson) Bay, haul off so as to arrive off Hanks Island in mid-channel. **Hanks Island** is a small, low, rocky islet, with a scant growth of trees lying close to the northwest shore and midway between Sheep and Simpson bays. The *Albatross* in passing in kept Hanks Island close aboard to avoid a shoal on which a cannery ship grounded, but in making the survey the shoal was found, and it is probable that we passed very close to it, if not over it. From Hanks Island to the cannery the survey will be the best guide.

From mid-channel, off Hanks Island, a course **NE. $\frac{1}{2}$ E.** will carry to the Narrows. Keep in mid-channel through the Narrows and round Hawkins Point close-to, after which follow the channel between Knot Point and Observation Island. Keep the starboard shore aboard until halfway between Knot Point and Grass Island, when haul sharp across the passage on a course **E. $\frac{3}{4}$ S.** On this course the vessel will head for the highest peak in the back mountain masses, and on range, or nearly on range, with it will be a small sandy beach at the water line. This course will carry across the narrowest part of the bar in 3

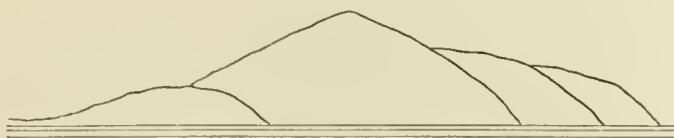


fathoms at mean low water. After passing the bar, which will be indicated by the lead, if bound for Orca, haul to the northward for the cannery and anchor off the building in from 6 to 8 fathoms; if bound for Odiak, haul to the southward and anchor to the northward of Spike Island in from 6 to 8 fathoms.

There is a channel around the northern end of Observation Island for the use of which a local knowledge is necessary, but the following may be useful at low water:

Give Hawkins Point a fair berth, 2 cables, and steer for a conspicuous dead tree on the eastern shore $\frac{3}{4}$ mile north of the cannery. This will carry between **South Rock** and **North Rock**, both of which are uncovered at low water, the former 1 cable and the latter 6 cables off the northern shore of Observation Island. The channel I would recommend is the Odiak Channel; it appears to carry more water, and so far as known there are no rocks in the way.

In leaving Orca or Odiak, when up with the small sand beach previously referred to, haul sharp across for a point midway between Knot Point and Grass Island, or for the highest hill on the opposite (western) shore.

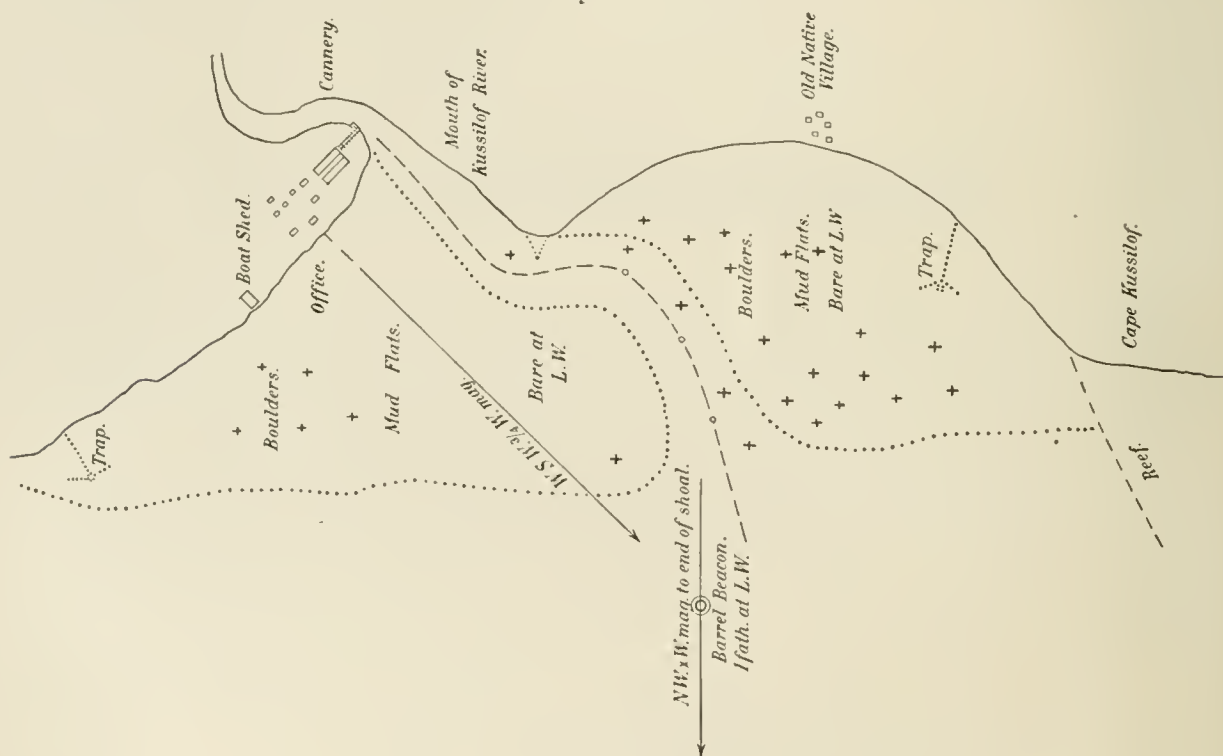


The *Albatross*, in leaving Prince William Sound, passed between Seal Rocks and Cape Hinchinbrook, about 2 miles from the latter, and obtained a sounding off the cape of 10 fathoms. The waters were discolored and uninviting, and even after passing the cape many swirls were encountered; in general, the locality had an uninviting appearance.

COOK INLET.

Kussilof.—The *Albatross* passed up Cook Inlet, keeping from 4 to 6 miles off the eastern shore. It is very difficult to locate one's position there, as there are no landmarks that can be recognized by a stranger, and the current is so strong that the logged distance is deceptive. The break in the line of bluffs, as mentioned in H. O. Supplement No. 2, page 17, occurs some distance below Kussilof. About 2 miles off the eastern shore, and about 6 miles below Kussilof, there are two large rocks, known as the Sisters, which form the best mark for this place. It is recommended to give these rocks a berth of 2 miles. If bound up the inlet Kussilof should be given a berth of at least 6 miles to clear the great shoal that makes off at that point. The shoal extends out in a **NW.** by **W.** direction.

To anchor off the cannery bring the company's office, the first white building north of the cannery, to bear **ENE.** $\frac{3}{4}$ **E.** and stand in for it, keeping it on this bearing. Keep the lead going, and anchor as soon as a depth is found suitable for the draft of the vessel, allowing 30 feet for the range of spring tides. A narrow shallow channel for the cannery steamers and launches, marked during the season the cannery is operated by a barrel beacon and stakes, winds through the inner shoals from the southern side and around the cape into the river. The mouth of the channel is dry at low water.

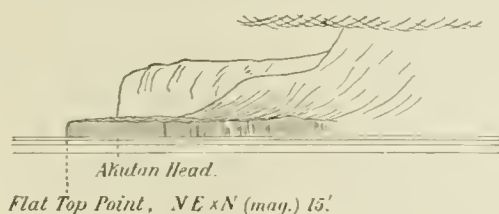


FROM UNALASKA TO CHIGNIK, THROUGH UNIMAK PASS AND INSIDE THE ISLANDS.

UNALASKA TO CAPE PANKOF.

The Coast Survey Chart (No. 9007) of Unalaska Bay is the best guide to pass out from the anchorage at Iliuliuk or Dutch harbors.

Upon arriving at a position 1 mile **WNW. $\frac{3}{4}$ W.** from Kalekhta Head (Cape Kalekhta), a course of **NNE. $\frac{1}{2}$ E.** carries 1 mile clear of Flat Top Point, which from this position bears **NE. by N.** and is seen as the northwestern extremity of Akutan Island. From the same position, the middle line of apparently clear water through Akutan Pass bears **ENE. $\frac{3}{4}$ E.** with Unalga Pass just opening, and a course for Unalga Point may be shaped. Flat Top Point here appears as a low foot or bench projecting from the higher lands of Akutan Island with the northern extremity of the island, North Head, cutting the middle of the foot.



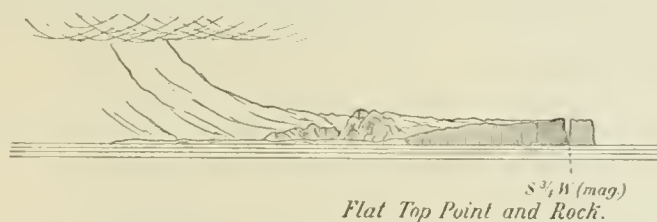
As Flat Top Point is approached, Priest Rock, off Cape Kalekhta, draws on the eastern slope of the flat Ulakhtha Head, forming the extreme end of Amaknak Island.

When Flat Top Point bears **E.** it is seen projecting against the high lands back of it. The foot then has the appearance of friable lava, and on the seaward face are numerous arches and caves.

On the course **NNE. $\frac{1}{2}$ E.**, as Flat Top Point draws abeam, Akun Head is seen to open clear of North Head of Akutan Island on a bearing of **NE. $\frac{1}{2}$ E.**; and in looking to the southwest a reef, bare at low water, is seen extending from the western face of Akutan Island for a distance of 1 mile, the outer end seeming to cover the western end of Unalga Island.

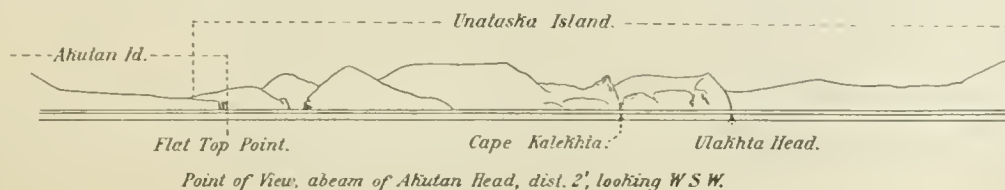
Continue the **NNE. $\frac{1}{2}$ E.** course until North Head of Akutan Island comes abeam, distant 2 miles, when change to **NE. $\frac{1}{2}$ E.** for Akun Head.

From the position off North Head, Priest Rock is seen against the high flat Ulakhtha Head of Amaknak Island, and Flat Top Rock, bearing **S. $\frac{3}{4}$ W.**, is now seen detached from the point. The rock is the same height as the point and seems as if part of the point had been detached and slipped a short distance seaward.



Akutan (North) Head consists of two high ridges, separated by a grassy valley. The eastern one is the more abrupt and extends farther to the northwest, having on the eastern side a bold bluff which seems to dip into a low valley. The bluff is of a warm reddish color with the stratification dipping slightly to the northwest.

From the position off North Head, Akun Head is seen as a high massive head with a nearly vertical sea face. From the same position, Cape Kalekhta shows as a conical peak and may be recognized as being the only one of that description seen in that direction.



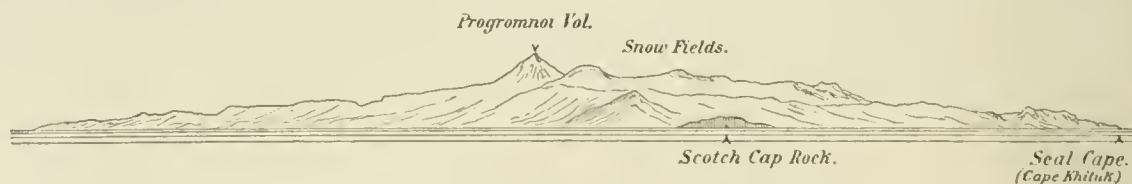
After running 1.2 miles on the **NE. $\frac{1}{2}$ E.** course, Flat Top Point will be seen on range with the extreme end of Cape Kalekita, and the extreme end of Amaknak Island just open, bearing **SSW. $\frac{1}{2}$ W.** At the same time Progromnoi Volcano, Unimak Island, will be seen directly ahead, with extensive snow fields a little to starboard.

As previously noted, Akun Head has a nearly vertical sea face, and as seen upon nearer approach has a high grass-covered (in summer) saddle to the southwest.

The course **NE. $\frac{1}{2}$ E.** from the position off North Head carried 14.7 miles should bring Akun Head abeam, about 2 miles distant. In this position the eastern extremity of Ugamok Island bears **E. $\frac{3}{4}$ N.** A course of **E.** by **N.** should now carry 5 miles clear of Cape Khituk.

The currents through these passes are very strong. Through Akutan and Unalga the course of the vessel is in the direction of the current, but through Unimak Pass, if bound from Akun Head to Cape Khituk or the reverse, the current is either on the bow or the quarter. The allowance of course depends upon the speed of the vessel. Under average conditions an allowance of 2 points will probably not be found too much during the strength of the current.

After rounding Akun Head and standing through Unimak Pass, the attention is attracted to the island of that name, and the eye is first fixed on the rugged, snow-clad, volcanic peak of **Progromnoi**, over 5,500 feet high, conical, with dark vertical ridges cropping through the snow. From a flat-topped dome apparently as high as Progromnoi but seemingly not connected with it, there extends to the southeast a long, high, snow-covered table-land, dipping gradually toward Cape Khituk. This snow field apparently extends halfway to Cape Khituk, and about one-fourth of the distance from the higher mountain a marked nub or teat is noticed. The slopes, except around Progromnoi, are not abrupt. The contour between the volcano and **NW.** Cape (Cape Sarichey) is rolling. Except the snow-covered portions the general color is green during July and August from the grass-covered slopes. In the vicinity of the Scotch Cap the bluffs are reddish gray with a dark pinnacle rock at the base of the bluffs. Cape Khituk has the appearance of being terraced back in three steps.

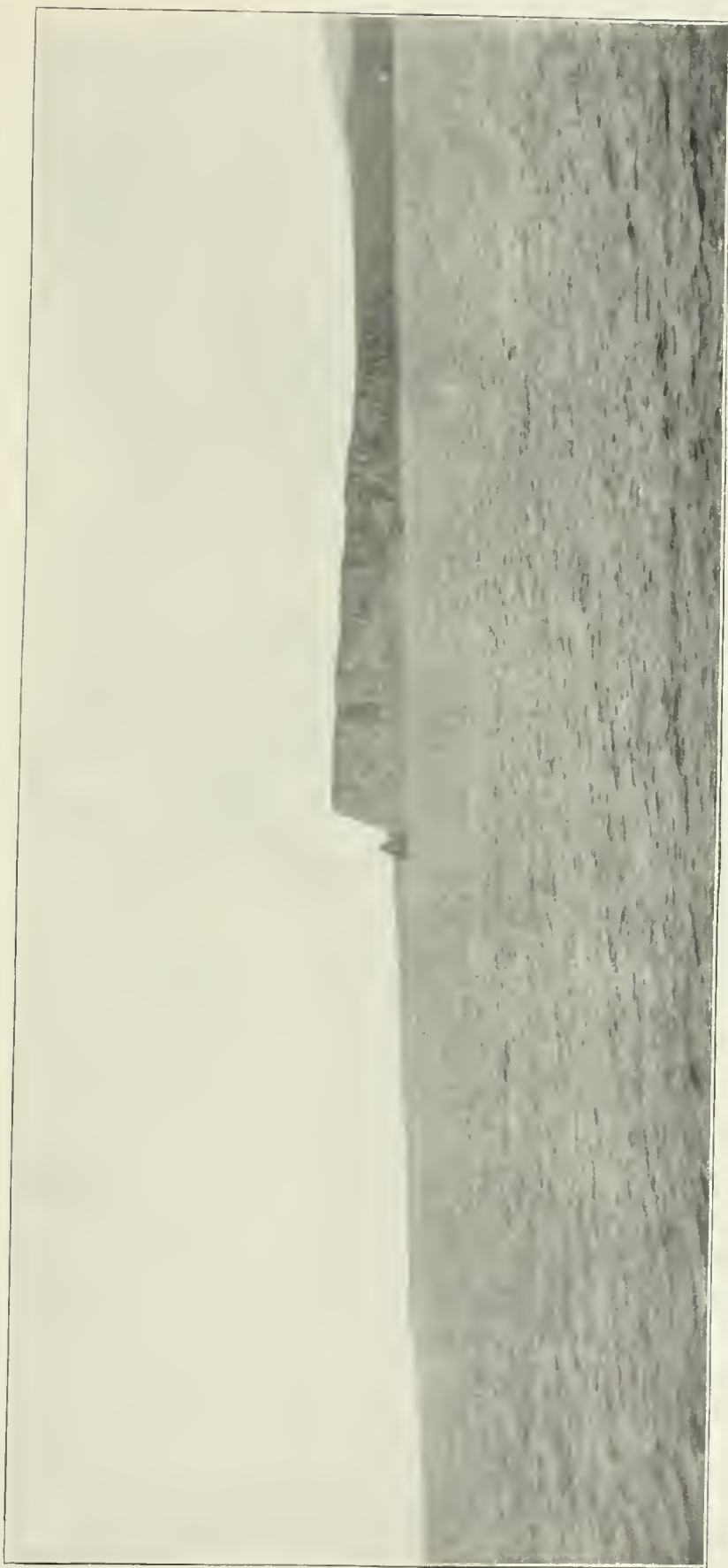


Ugamok Island is rugged in outline with bold rocky bluffs. It is highest at the eastern end, where there is a sharp conical peak.



About halfway between **Scotch Cap** and **Cape Khituk** a bare slope is seen, consisting apparently of volcanic sand and ash, of slate color, with a slate-colored bluff at the eastern end. To the westward of the Scotch Cap a stream enters the sea, which from the westward shows as a cascade, but is not visible from the southward. A short distance east of the Cap is a large rock standing on the grassy slope near the beach, and having the appearance of a hut or barabara.

To the eastward of Cape Khituk there is a hill or bench, apparently composed of volcanic rock and detritus, about 700 feet high, detached from the interior plateaus and ridges by intervening valleys. On the seaward face it is bluff, with a foot of detritus partly covered during the summer with grass and sloping toward the water. From this hill there



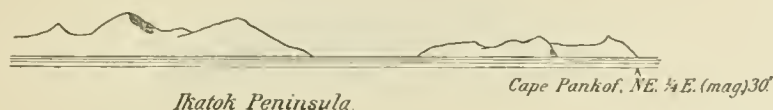
PINNACLE ROCK, SCOTCH CAP, ENE. 1 E.

extends a low belt of land to the northward, at the end of which is the Promontory, which forms the western entrance to Unimak Bay.

The **Promontory** on the northern and southern sides slopes away gradually, joining the features of the lower land on either side, while the crest (grass-covered in summer), though appearing as a detached mass, is really joined to the central mountain system by a lower connecting ridge. The seaward face terminates in a vertical cliff having a low rocky foot with outlying ledges.

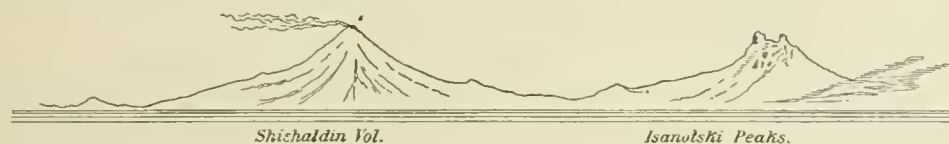
The published charts can not be followed in navigating these waters. They consist only of disconnected sketches, a survey never having been made of the locality, and must only be considered as a general guide. Besides, the currents are strong and difficult to predict even within large limits, and safety depends upon constant vigilance.*

From a position at which Cape Pankof bears **NE. $\frac{1}{4}$ E.** distant 30 miles, the headland forming the outer end of the cape appears as an island.



From the same position the volcano **Shishaldin** is seen, cone-shaped, regular in outline, with faint wreaths of smoke and vapor drifting from its blackened tip. It is for the most part snowclad, except where the rocky cliffs and projections afford no lodgment.

Isanotski is seen to the right, very rugged, and having a broken or castellated double peak. On account of its rugged character less snow finds lodgment on this peak, but on the southwest side there is an apparently deep rift filled with snow. The great, bare, rocky outcrops impress one with their massiveness. The double and broken summit is bare and looks as though composed of great vertical rock masses.



After rounding Cape Khituk (Seal Cape), give the points of land on the southeast shore of Unimak Island a berth of several miles and pass Cape Pankof at a distance of 2 miles. The waters around the point of the cape seem to be clear of dangers.

CAPE PANKOF TO DEER ISLAND PASSAGE.

With Cape Pankof bearing **NW.**, distant 2 miles, lay a course of **N.** by **E. $\frac{1}{2}$ E.** and keep it for fourteen miles, which should carry 2 miles **NW.** from Umga Island, whence a course of **NNE. $\frac{3}{4}$ E.** 16 miles should carry well past Fox Island and into the passage between Deer Island and the mainland. As some current will probably be encountered, these courses and distances must not be blindly followed. The chart gives Umga Island relatively too far to the northwest, for if it were known that Cape Pankof and Umga Island were both bold, a single course would carry from Cape Pankof to the passage, leaving Umga Island to the southward. Do not go to the southward of Umga Island, where foul ground is reported.

Pass Fox Island about 1 mile distant, and give Thin Point a wide berth, as it is shoal, with many detached rocks lying some distance offshore. On the course **NNE. $\frac{3}{4}$ E.** from Umga Island to the passage, and 5 miles from the former, in looking to the southwest Cape Pankof appears like a headless sphynx having a general reddish color, which in summer has a greenish tinge. **Umga Island** at the same time is seen $\frac{1}{2}$ point open from the cape, and in

* See remarks on Chart 8500, page 121.

clear weather stands prominently against the sky line. It is a small rounded island, probably 150 feet high and $\frac{3}{4}$ mile in diameter, and rises abruptly in sloping bluffs on nearly all sides. In summer the top and the gentler slopes are grass-covered, and the rocky outcrops are dark brownish. From the position referred to it resembles a military cap with the visor turned to the northward.



Looking to the northwest (from the same position) **Amagat Island** appears prominently; it is high and bold and resembles two beehives abutting, the one to the southward higher and sharper, the other lower, broader, and flat-topped. The color is clayey red with splashes of green.



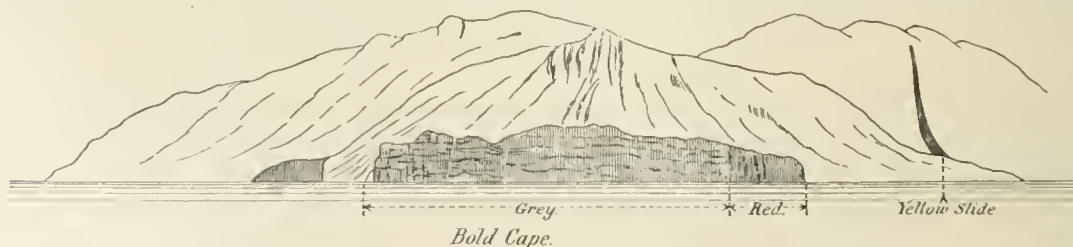
To the southward and eastward the low islets and reefs belonging to the Sandman Reefs are visible. To the northeast are seen **Deer Island**, an irregular mountain mass with intervening valleys, having off its southern end several small islets, and Fox Island, lying in a crescent-shaped bay of Deer Island. To the northward is Thin Point, low, covered with grass, and terminating in a low bluff of reddish clay, with a peculiar low dome-shaped hill lying back from the shore line.

On the course **NNE. $\frac{3}{4}$ E.** about 7 miles from Umga Island, soundings of 15 to 20 fathoms of water may be obtained, shoaling as Deer Island is approached, and an anchorage may be made here in moderate weather for the night in case it becomes thick.

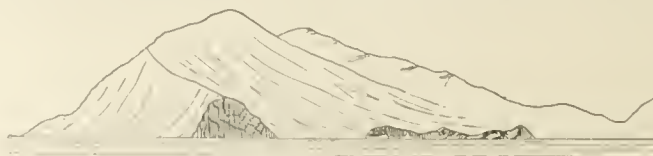
The wind hauling over the narrow necks of land separating the adjoining bays on the southern side of the peninsula from Bering Sea are sometimes very violent.

DEER ISLAND PASSAGE TO ILIASIK STRAIT.

Bold Cape, on the northern side of Deer Island Passage, is seen as a blunt hill with a bare red top and sides gently sloping to the east and west, and the seaward face broken off into steep rocky bluffs of a grayish color, except at the eastern end, where it is a brick red. Immediately east of the cape is a second hill, marked by a yellow slide, which extends down the face of its grassy slope. A number of detached rocks lie close inshore around the cape.



The northeast end of Deer Island is high, and grass-covered to the top. North Cape may be recognized by a steep, high, triangular cliff in the otherwise sloping hillsides.



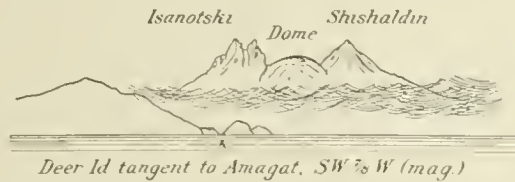


Inner Iliak I. in right foreground.

PAVLOF VOLCANO FROM NEAR BELKOFSKI.

The *Albatross* kept in mid-channel through the passage, and with Bold Cape abeam changed course to **NE.** by **E.** $\frac{3}{4}$ **E.**, ran 17 miles, and fetched in Iliasik Strait.

With Bold Cape bearing **W.** by **S.** and North Cape **SW.** $\frac{3}{4}$ **S.** the northern end of Deer Island was noticed tangent to Amagat Island, bearing **SW.** $\frac{1}{4}$ **W.** Directly over Amagat Island and above the clouds rose the rugged peak of Isanotski, with Dome close to it and the tapering cone of Shishaldin abutting on Dome, the three peaks nested together with Isanotski to the southward and Shishaldin to the northward.



The route is through Iliasik Strait, between the Outer and Inner Iliasik islands. There is no practical channel for vessels between the inner island and the mainland; there is a narrow passage for small vessels, but it is much obstructed and a local knowledge is necessary for its use. Close under the northern shore of this passage is a high lone rock.

The greater part of the Outer Iliasik is a mass of irregular hills, terminating on the southern end in a long low point.

From off Bold Cape the **Inner Iliasik** has the appearance of two separate islands, but upon nearer approach it is seen that the island has a high hill at either end connected by a low neck of land, the southern one taking up half the length of the island and the upper or northern hill from the southward resembling a gigantic saddle covered with grass. The western sides of the two hills are high irregular bluffs.



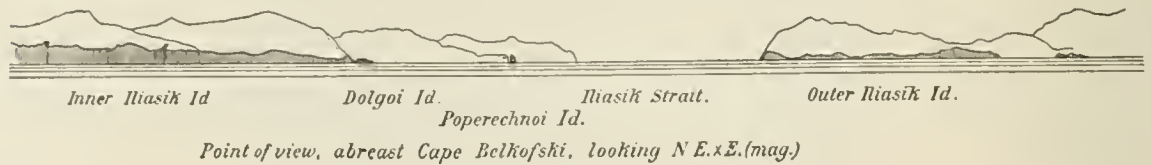
Inner Iliasik Id. from Wd.

Belkofski Cape forms the eastern point of entrance to the bay of the same name. It is recognized by its high hill, the upper part bare and gray-colored, the lower slopes grassy, with a double slideway in nearly parallel lines on the southern face extending nearly to the water. Immediately east from the cape a low bluff extends to a bend in the shore line, on which is situated the village of Belkofski. The anchorage is off the village in 10 to 12 fathoms, with the high rock, previously referred to as standing close to the northern shore in the passage between the Inner Iliasik and the mainland, on range with Moss Cape. There is a long sand and boulder beach in front of the village, on which a landing may be made in moderate weather.



Upon approaching the passage from the westward on the course **NE.** by **E.** $\frac{3}{4}$ **E.**, a reef of rocks is seen to extend from the Inner Iliasik for quite a distance into the channel. Upon nearer approach these rocks are seen to make off from the southern point of the island; in fact, the shores of both islands in the vicinity of the straits, except the eastern side of the inner island, appear foul, but there do not seem to be any dangers in mid-channel. The waters in the passage were carefully observed, but no indications of kelp or shoal water were observed except alongshore. On approaching the passage soundings in from 8 to 12 fathoms were obtained—there may be less—on which it is thought an anchorage could be made in case of fog.

The course of **NE.** by **E.** $\frac{3}{4}$ **E.** carried the *Albatross* from Deer Island Passage through the Iliasik Strait. It was noticed that on this course a high detached pinnacle rock lying off the southern end of Dolgoi Island was on range with a nipple on the upper slope of Poperechnoi Island. Strangers should upon approaching the strait open it wide before attempting the passage, and then stand through in mid-channel.



ILIASIK STRAIT TO UNGA STRAIT.

The route is between Inner Iliasik and Goloi islands, and then around the northern points of Goloi, Dolgoi, Ukolnoi, Wossnessenski, and outlying islets, and Unga Island, or between the islands and the peninsula.

After passing through the Iliasik Strait in mid-channel, and clearing this well, haul up **NNW.** $\frac{1}{4}$ **W.** No special courses can be given through these passages, as they must be frequently changed to suit the conditions. I can simply say, follow the route indicated and keep in mid-channel.

Goloi Island from the westward appears as a moderately high single ridge with steep sides, the greater part in bluffs of gray or brown-gray color. At the northwest point a long, low, flat sand and shingle point makes into the channel. On the inner end of this spit is a grassy knoll open from the base of the ridge.



A sand and shingle spit makes off toward the channel from Moss Cape, and this, with the spit off Goloi Island, when seen from certain positions, seems to extend a long distance into the channel; but upon nearer approach it is found that these spits are more marked to the eye on account of the surrounding higher land, and that a wide channel carries safely through. The *Albatross*, after passing Goloi Island, kept **N.** $\frac{1}{2}$ **W.**, which carried clear of Bluff Cape, the northwest point of Dolgoi Island. On this course the upper part of Inner Iliasik Island was directly astern.

Bluff Cape, bearing **N.** by **E.**, appears as a series of low, dark-brownish, rocky bluffs, back of which the land rises gradually in a grassy slope to the upper hills of the island.



A sand spit was noticed to make out from Dolgoi Island toward Goloi Island.

Judging from our run to the eastward, I believe the following directions will hold good for a vessel using this passage and bound to the westward, though we did not have an opportunity to try it.

From a point $\frac{3}{4}$ mile off Bluff Cape, steer for the highest part of the upper half of the Inner Iliasik, and after rounding the spit on Goloi Island steer for the center of the Outer Iliasik until the Iliasik Strait is wide open, then pass through in mid-channel.

Bear Cape is comparatively low, with the extreme point broken into hollows and caves, the eastern part presenting low cliffs of basalt of marked columnar structure, appearing like a vast stockade with the top covered with grass.



The three peaks of Pavlof come into view before passing through Iliasik Strait, and in the vicinity of Bear Cape the rugged castellated Aghileen Pinnacles come in sight.

From a point $\frac{3}{4}$ mile off Bluff Cape, a course **NE. $\frac{3}{4}$ N.**, 10.3 miles, carried the *Albatross* to a beam position off the northern extremity of Ukolnoi Island, distant 1.6 miles. Changed course here to **NE. by E.**, and after running 15.4 miles arrived at a point where Seal Cape was abeam, distant about 2 miles; then changed course to **NE. $\frac{1}{2}$ E.** and ran 17.9 miles to a point off Gull Island at the entrance to Coal Harbor, Unga Island.

Ukolnoi Island is generally grass-covered, but few places showing bare rock. The northernmost part seems to be the highest, and culminates in a ragged-topped peak. From the eastern end a series of rocky projections seem to extend to Wossnessenski Island. Near the northern end a large ledge of rocks well above water was noticed about $\frac{1}{2}$ mile off the shore.



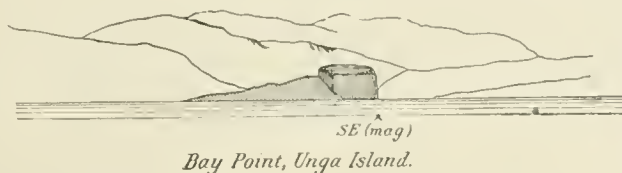
Wossnessenski Island, as near as could be judged, has a central broken ridge with the highest features east of the center, terminating at the eastern extremity in high, steep bluffs. Two large rock masses lie well off the eastern point.



The chart is so much in error along this course, particularly along the peninsula, that it is almost impossible to recognize any of the shore features by it. Seal Cape is about 2 miles to the eastward of the point forming the entrance to Coal Bay (peninsula side) and seems to lie nearer the channel than the latter. An outlying rock lies about 1 mile to the eastward of Seal Cape. Coal Bay Point is recognized by the small rocky islet lying off its extremity. It is said that a rock known as Moses Rock lies some distance off this shore, and it may be the rock referred to as being near Seal Cape. In the absence of better information, however, I would recommend that vessels in passing give the locality a berth of about 2 miles.

Jude Island, south of the course, appears low and conical.

Bay Point, Unga Island, is a prominent landmark, and seems steep with a precipitous sea face. The top is flat, covered with grass, the bare rock showing dark brown.



From Pavlof Bay to Point Swedania, along the peninsula, including Coal Bay, Otter Bay, Beaver Bay, and Portage Bay, the charts seem very much mixed, and it would be out

of place to attempt a criticism based upon observation simply in passing. My impression is, however, that the old Coast Survey chart 806, along this part, gives a fairer idea of the shore features of this locality than 8800. Beaver Bay seems to make in as shown on 806, and the entrance to Otter Bay did not open until just before Point Aliaksin shut it in.

What I judge to be **Point Aliaksin** is the seaward extension of a moderately high ridge lying between Portage Bay and Beaver Bay. From the westward it is not readily distinguished from the point of entrance to Beaver Bay, but after passing, on a bearing **NW.** by **W. $\frac{1}{2}$ W.**, it comes out clear and appears as a moderately steep point with an outlying reef partly above water to the **SW.**, and a bright red-colored bluff a few hundred yards to the eastward.



The shores on each side of Unga Strait are comparatively low, rising to the higher hills a short distance back.

Gull Island, off the entrance to Coal Harbor, Unga Island, is a small irregular mass of reddish rock, flat on top, and about 60 feet high. It is easily distinguished and is a good landmark.

Coal Harbor, Zacharefskaia Bay.—A good anchorage may be made in this harbor, but care should be observed in entering, as the chart, C. S. No. 8891, does not show a danger near the entrance. The extent of the shoal making off the western point of entrance toward Gull Island is not shown on chart 8891. From Gull Island at low water, rocks out of water were observed extending out (from Unga Island) to a bearing **SE. $\frac{1}{2}$ S.** It is on these rocks that the schooner *Webster*, it is said, was lost in 1891. In entering, pass $\frac{1}{2}$ mile to the eastward of Gull Island and steer for Round Island; or keep in mid-channel, slightly favoring the eastern shore. Weedy Shoal need not be feared, as it shows plainly and lies just outside the headlands. The *Albatross* made a night anchorage here off the lower end of Weedy Shoal.

UNGA STRAIT TO KARLUK.

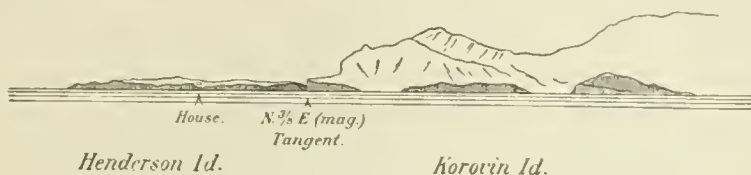
The route lies north of Unga and Popof islands, between High Island and Korovin Island, and through Gorman Strait to Kupreanof Point; thence along the southern side of the peninsula, and between Sutwik Island and the Semidi Islands.

From a point 1 mile off Gull Island, the *Albatross* steered **E. $\frac{5}{8}$ N.**, 19 miles, which carried into Gorman Strait. **High Island** is the key to Gorman Strait in thick weather. It is small, high at the northern end, and at a distance from the westward resembles a sleeping lion. It is about 200 feet high, with steep red cliffs as seen from the westward, and a flattened grass-covered top. From the eastward the red cliffs are not seen, but to the northward appear steep grassy bluffs with grassy slopes to the southward.

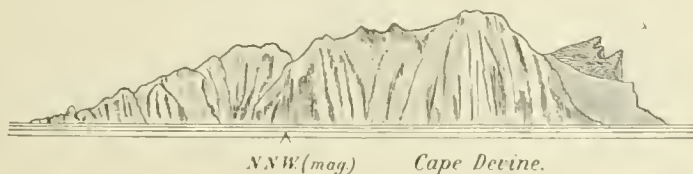


Henderson Island is a small, low, rocky islet lying close under the western shore of Korovin Island, and in approaching from the westward it is difficult to separate it from Korovin Island until close-to. The chart position does not seem to be correct; I think it lies

more to the northward. Approaching from the westward it opens out on a bearing $N. \frac{2}{3} E.$, comes tangent again on $NW. \frac{3}{4} N.$, and closes out altogether on $NW.$ by $W. \frac{1}{2} W.$

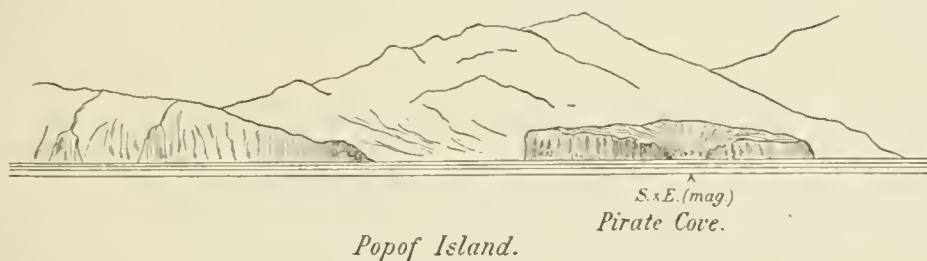


Korovin Island on the southern end has a rugged head, which, at a distance, when approaching from the eastward or westward, appears to be a separate island, but on nearer approach it is seen to be connected by a moderately low grassy neck.

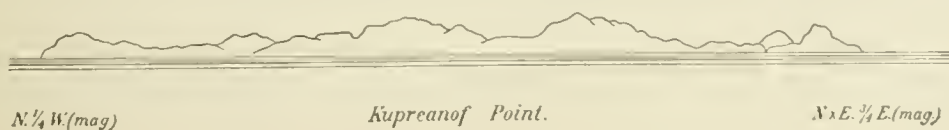


Andronica Island appears rugged, with grass-covered valleys. In approaching from the eastward, off the northern end, a beehive-shaped rock, apparently 150 feet high, with grass-covered top, projects slightly from the shore. This rock changes its appearance as the straits are approached, and when abeam it is seen as a split rock. To the westward a rugged cliff has on its projecting foot a marked yellow slope. The extreme northwest end has a bold, rugged face, without verdure.

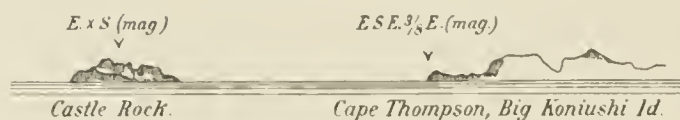
Gorman Strait seems to be free of all dangers. There are a few scattered rocks along the shore, and extending a short distance beyond the points; but until the locality has been surveyed the usual mid-channel course followed by vessels is recommended. From the middle of Gorman Strait, High Island is seen tangent to the northern extremity of Popof Island.



Kupreanof Point is the southeast extremity of an irregular peninsula making off from the mainland and having Ivanof Bay on the east and Stepovak Bay on the west. The point is high and bold, the extreme end appearing very rugged. It is an important landmark.



Castle Rock in clear weather is seen to the southeast after clearing Andronica Island. It lies off the northern end of Big Koniushi Island, and appears like a great mass of rocky, castellated crags. It is an important landmark for vessels making the Shumagin Islands from the southeast.



The *Albatross* in going to the eastward stopped along the route, but in going to the westward she went direct from Karluk through Gorman Strait. I shall therefore give the courses and distances run by the vessel from Karluk to Gorman Strait.

From a point 1 mile to the northward of Cape Karluk laid a course **S. 26° 30' W.**, ran 97.3 miles by patent log, when Foggy Cape was abeam, distant 5 miles. Changed course to **S. 34° W.**, and ran 103 miles by patent log, when Kupreanof Point was abeam, distant about 6 miles. On this course passed Mitrofanía Island, distant 2.6 miles. With Kupreanof Point abeam, changed course to **S. 56° W.**, and ran 21.4 miles by patent log, which carried through Gorman Strait.

Reversing these courses:

From Gorman Strait to a point 6 miles off Kupreanof Point, **N. 56° E.** 21.4 miles by patent log; from a point 6 miles off Kupreanof Point to a point 5 miles from Foggy Cape, **N. 34° E.** 103 miles by patent log; from a point 5 miles off Foggy Cape to a point 1 mile off Cape Karluk, **N. 26° 30' E.** 97.3 miles by patent log.

We saw no islets south of Mitrofanía Island, but noticed two that appeared to lie nearly on a line or a little outside of the line joining the southern extremities of Mitrofanía and Chiachi islands. It is probable that more or less tidal current is felt along this stretch, so that courses may not be implicitly followed.

In going to the eastward the *Albatross* stopped at Chignik Bay and made a night run from Gorman Strait to Chignik Bay. On leaving Gorman Strait a course **N. 56° E.** was carried for 40 miles by patent log, and then changed to **N. 34° E.** for 58 miles by patent log. This run carried a long distance off the entrance to Chignik Bay and about 11 miles outside of Mitrofanía Island and 14 miles outside of Chankliut Island.

CHIGNIK BAY.

The chart in the vicinity of Chignik Bay and the outlying islands, including the Semidis, is very much in error. During the few days the *Albatross* visited the fisheries at Chignik Bay a sextant sketch was made of the bay and a reconnoissance of the Lagoon and Anchorage Bay. On the sketch an approximate location has been given of the features on the southern side of the bay, together with Nakchamik, Atkulik, and Rocky islands. This sketch is sufficiently accurate for navigation purposes in the locality covered by it; but it is not connected with the Semidi Islands or Sutwik Island, which are important features in making Chignik Bay. I realized all this at the time, and an attempt was made to extend the work to those points, but the weather was thick and our regular work admitted of no delay.

Captain Hansen of the Alaska Commercial Company, who commanded the *Dora*, a mail steamer making monthly round trips between Sitka and Unalaska, furnished the following courses and distances which he had run by patent log and verified. From the **SE.** end of Atkulik Island to the point of Foggy Cape, **NE.** by **N.** 30 miles; from Foggy Cape to the

north point of Aghiyuk Island, **SE.** 21 miles. This would make the approximate position of Foggy Cape in

Latitude 56° 32' 53" **N.**,
Longitude. 156° 58' 46" **W.**,

and the north point of Aghiyuk Island in

Latitude 56° 13' 41" **N.**,
Longitude 156° 13' 28" **W.**

Captain Hansen also furnished the following (see H. O. Pub., No. 20, Sup., No. 2):
North end of Aghiyuk Island,

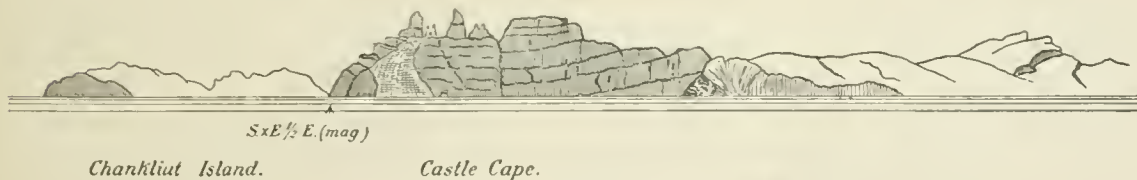
Latitude 56° 15' **N.**,
Longitude..... 156° 53' **W.**;

South end of Aghiyuk Island,

Latitude 56° 11' **N.**,
Longitude..... 156° 53' **W.**

These last positions are probably obtained by accepting the chart position of Foggy Cape as given on past editions of the chart and applying the runs. I am inclined to think that the first positions I have given are approximately correct. They were obtained by taking as the point of departure the astronomical position of the *Albatross* at Anchorage Bay, applying to it the direction **ENE.** $\frac{1}{2}$ **E.** 22 miles to the southern side of Atkulik Island (taken from the sketch), and **NE.** by **N.** 30 miles (from Hansen). This gives an approximate position for Foggy Cape; then applying Hansen's course **SE.** 21 miles, gives the approximate position of the northern end of Aghiyuk Island.

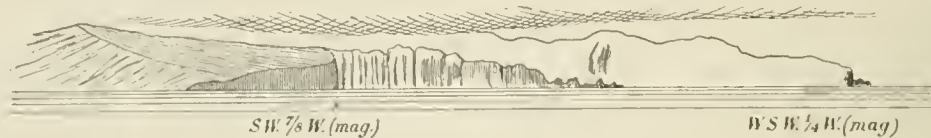
Chignik Bay is easily recognized by the topography of the southern shore. The southern point of entrance is **Tuliumnit** or **Castle Point**, the extreme end of a coast ridge, and seems to be composed of a friable sandstone in horizontal strata. The point stands out boldly, and is rugged and castellated in towers and pinnacles. The extreme seaward face is denuded, and a large slide is noticeable.



Immediately west of the point is **Castle Bay**, about two miles wide at the entrance, and several miles long, with a ridge projecting into the southwest side apparently forming two arms of the bay. West of Castle Bay are four projecting ridges with valleys between, terminating in shingle beaches, which seem to form shallow bays or coves. Across the shingle the land dips down as though there might be ponds inside. The third ridge has a high grassy bluff projecting to the eastward toward the valley. The ends of these ridges are nearly on line on a bearing **E.** $\frac{1}{2}$ **S.**

Anchorage Bay is the deep indentation that makes around the western side of the fourth ridge (see survey). This ridge, as seen on entering the bay, rises in vertical bluffs about 200 feet high, receding to a rounded hill, covered with grass and scrub alders, to a height of nearly 1,000 feet. The ridge on the western side entering the bay is irregular in form, partly grass-covered, with vertical bluffs on the water face. Off the western point of entrance and projecting into Chignik Bay is a large isolated rock, grass-covered, 82 feet high, connected with the shore at low water, and having a lower sentinel rock projecting from it. A shingle spit projects from the eastern shore in a general southwest direction.

Enter the bay in mid-channel and anchor off the canneries in 15 to 18 fathoms. The best holding ground is off the Pacific Steam Whaling Company's cannery. Off the upper cannery and under the shingle spit the holding ground is not good. The winds blow very strong, and vessels are frequently driven from their anchors. To the eastward of the canneries the mountain masses are high and abrupt, and the back-lash of the easterly gales makes the anchorage very uncomfortable. In the spring and fall heavy northwest gales make the anchorage sometimes unsafe.



SW $\frac{7}{8}$ W. (mag) *WSW $\frac{1}{4}$ W. (mag)*
Entrance to Anchorage Bay, Chignik.

Next west from Anchorage Bay is **Doris Bay**, called locally Mud Bay, of which the Coast Survey publishes a chart (No. 8891), and west of the latter is Chignik Lagoon, at the head of which is the salmon stream. An anchorage may be made off the entrance to Doris Bay, but no deep-draft vessel can enter the bay.

The head separating this bay from the lagoon terminates in a high, rounded head, with a nearly vertical sea face. Moderate-sized vessels have entered the lagoon and moored off the cannery, but I would not advise it. I was told that insurance companies declined issuing insurance to vessels entering the lagoon.

In entering or leaving Chignik Bay, strangers should leave Nakchamik and Atkulik islands to the northward and westward. Inside these islands there is some foul ground and unsurveyed dangers.

Nakchamik Island, from the southward and westward, is a bold ridge, lower at the western end, and lowest near its apparent center. Just to the eastward of the apparent center, where the outline, as seen from the position given, seems to dip mostly, rises a conical hill or peak, and from this peak to the eastern end of the island is a series of blunt peaks close together, terminating at the eastern tangent in a bold, high bluff. The island is generally grass-covered. A reef seems to make off the western shore for some distance.



NE (mag)

Nakchamik Island.

ENE $\frac{1}{8}$ E. (mag)

Rocky Islet is bold and high, generally grayish and reddish in color, with grassy patches on the less steep slopes. The southern bluffs are of marked columnar structure.

Atkulik Island resembles in character Rocky Islet. On the southeast side it has close to a high haystack rock.

Nakchamik Id.

Rocky Id.

Atkulik Id.



NE $\frac{1}{2}$ N. (mag)

NE $\frac{1}{4}$ E. (mag)

NE x E $\frac{1}{2}$ E. (mag)

Castle Cape from the northward and eastward is not so marked in outline and the slide seen from the northwest does not appear from this position.

Chankliut Island, SE. from Castle Point, as seen from the northward, appears like three separate islands tangent to each other. The western tangent is on range with Castle Point on a bearing **S. $\frac{3}{4}$ E.** From the position the apparent separate parts terminate on the nearest side in high red bluffs. The eastern and central parts appear generally flat, while the western part is conical. The slopes are grassy. A few scattered detached rocks seem to lie off the western side.



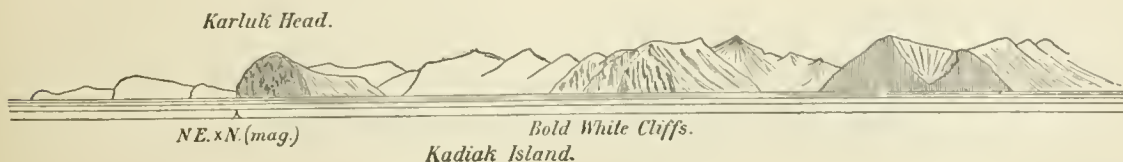
Before leaving this part of the subject, I beg to refer to the error on page 169, Bulletin No. 35, United States Coast and Geodetic Survey. Doris Bay, which was surveyed in 1874, and which cannot be used by deep-draft vessels, is evidently confounded with Anchorage Bay, which so far as I know was never surveyed until 1897. A reference to the sketch by the *Albatross* will make all this clear.

It was either at night or at twilight that the *Albatross* passed the Semidi Islands and Foggy Cape, and I am therefore unable to describe them, excepting to say that Sutwik Island is low.

KADIAK ISLAND

from the northward and westward appears very mountainous and rugged. The mountain tops seem to be of uniform height and of the same character, conical in outline, with straight sides except on the coast, where the faces are frequently broken off into cliffs or bluffs. The low peaks seem to be bare for a short distance from the top, and the prevailing color is reddish. The slopes of the mountains and the valleys on the western half of the island are covered with grass and alders, while the eastern half is wooded.

Karluk Head, or Cape Karluk, forming the western side of Karluk Roads, is very prominent and may be easily recognized as a bold, rocky headland projecting beyond all other points in this locality into Shelikof Straits. It is apparently the highest point and has a nearly vertical sea face, an irregular rounded top, and is reddish-brown in color. From the summit it slopes in a southerly direction and is grass-covered. With Cape Karluk bearing **NE.** by **N.** and Seal Rocks **SE.**, the cape is recognized as the most prominent headland along the northern shore. It appears conical in outline, higher than the adjacent hills extending back, and has bold sides; the receding slopes are grass-covered. To the eastward three low points are seen to make out from the shore, while the features to the westward are high and bold. From the point of observation there is seen to the westward of the cape a large section of whitish cliff, which upon nearer approach is seen to be the central part of the seaward face of a ridge separating two indentations.



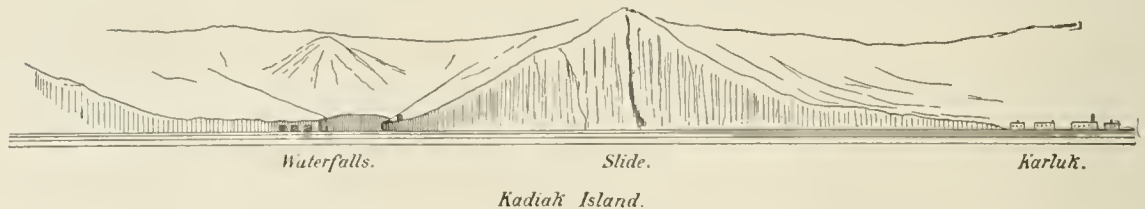
On approaching the cape the land to the eastward opens, and a high triangular bluff appears, which is next east of Cape Karluk, of a grayish color, with a marked slide extending from the central or highest part almost to the water.



Immediately to the westward of the cape is a cove or bight bordered by a low shore with grassy plains.

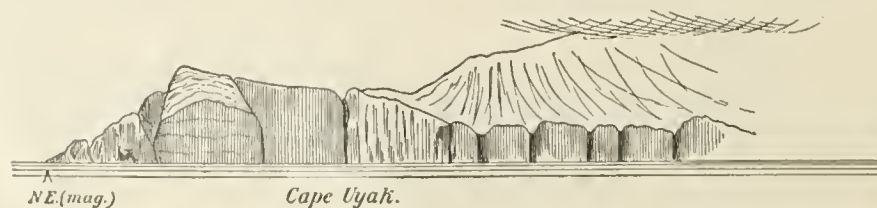
So far as known, there are no dangers off **Karluk**. The 3-fathom curve extends about $1\frac{1}{2}$ cables from the high-water mark off the shingle spit. It is an open roadstead (see survey), and in bad weather is an unsafe anchorage, particularly with winds from the southwest around by north to northeast. There are (1897) two large mooring buoys off the canneries, the western one in $15\frac{1}{2}$ fathoms, the inner one in $18\frac{1}{2}$ fathoms, to which vessels may moor. Anchorage may be found between the western buoy and Tanglefoot Bay in 12 to 14 fathoms, or between the buoys and the shore clear of the scows in the same depths. For a description of the canneries and the river, see my report. If necessary to leave Karluk to seek an anchorage, it may be found under Harvester Island, on the western side of Uyak Bay, about 18 miles from Karluk, for which directions will be given.

Slide and Waterfalls.—The main salmon fishery, and probably the largest in the world, is conducted on Karluk Spit, but some fishing is done off the Slide and the Waterfalls. The former is the slide in the triangular bluff next eastward of Karluk Spit, the latter, two in number, are in the twin valley just east of the former. They are not over 250 yards apart, separated by a conical knoll. There is a house on the bluff close to the bank of the western fall, and a large fishermen's camp on the beach close to the eastern fall.

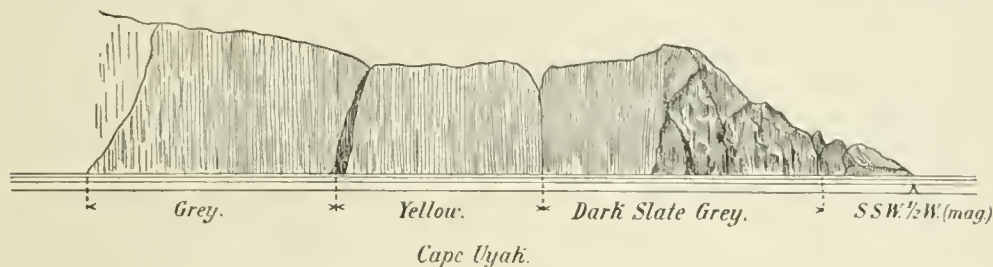


Northeast Harbor is a small cove a few miles east of the Waterfalls, in which the small cannery steamers make a fair lee in strong northeast winds. In 1897 there were four new shacks on the bluffs along the beach.

Cape Uyak, known locally as Seven-Mile Point, is about that distance to the eastward of Karluk. It is the outer end of a ridge terminating in an angular slope forming the pitch of the cape. As seen from the westward, it slopes from the water at an angle of 30 degrees, and has a small, grass-covered patch; beyond this it is bare to a deep cleft, and beyond this there are grass-covered slopes. The general coloring is slaty-gray, with reddish patches in the cliffs.



From the eastward Cape Uyak may be distinguished by its colors: from the extreme point to the cleft it is slaty-gray, then for an equal distance it is yellowish, the lines of demarkation being very sharp; the color beyond is light gray with a yellowish tinge.



It is said in going from Karluk to the anchorage in Uyak Bay that there are no dangers 1 mile off shore; on the run made by the *Albatross* we saw none. I should therefore give the following directions:

Steer a course that will carry at least 1 mile off shore, and when Harvester Island is made keep to the eastward of it and round its southern end $\frac{1}{2}$ mile distant. When the Pacific Steam Whaling Company's cannery, which is the southernmost and painted brown, is sighted, stand for it on a **SW.** by **S.** course and anchor 2 cables off the cannery in from 10 to 12 fathoms. Wishing to go to the inner anchorage, stand in as before directed, and haul up for the upper cannery, keeping the western shore well on board to avoid a dangerous spit making halfway across the channel from the southern point of Harvester Island. When past the spit, haul into mid-channel and anchor at discretion off the cannery or above in 15 fathoms. Favor the Kadiak Island side, as the Harvester Island side is shoal until well above the cannery. (See survey.)

The harbor is formed by Kadiak Island on one side and Harvester Island on the other. Bear Island, an islet at high water, lies off the northwest entrance. In entering Uyak Bay from the westward do not mistake Bear Island, which may partly hide Harvester Island, for the latter. There is a passage between Bear and Harvester islands, but it is obstructed with rocks. In 1897 the canneries had the channel marked by buoys, but they cannot be depended upon, and a local knowledge is necessary for its safe navigation; strangers should not attempt its passage.

The only known dangers in entering by the southern passage are **Cormorant Rock**, which covers at high water and is $1\frac{1}{2}$ cables off shore and lies **E. $\frac{3}{4}$ N.** over $\frac{1}{2}$ mile from the Pacific Steam Whaling Company's cannery, and the spit previously referred to.

Between Rocky Point and Bear Island a wide valley extends back several miles. It is grassy, with patches of alder. From the beach it rises in low but steep banks, which are bare and brownish in color, and then extends back in gentle undulations, but is generally level for several miles.

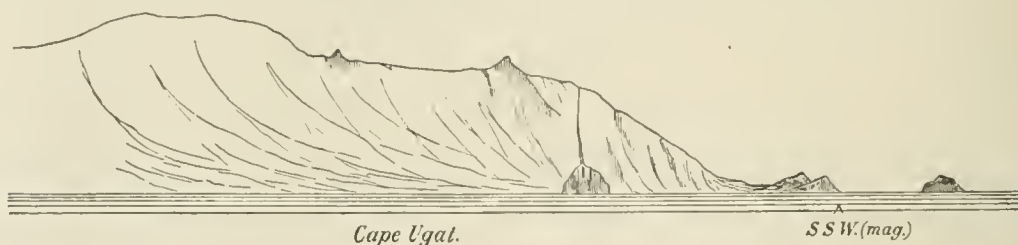


Larsens Bay.—The entrance to this bay is 5 miles **SE.** from the anchorage off the Pacific Steam Whaling Company's cannery. (See surveys.) The bay is 4 miles long in a **NE.** and **SW.** direction, and has an average width of over 0.6 mile. It is a beautiful sheet of water, very deep along the northwest shore, and shoaler along the opposite bank. The entrance is much obstructed by a rock which lies nearly in mid-channel, and the shoal water, which extends from both shores. No specific directions can be given; the survey is the best guide. A stranger desiring to use this passage should search out and mark the rock and

point of spit on the starboard hand entering, when a safe passage can be made and a good anchorage found off the old cannery wharf.

The Karluk Lakes are said to be about 6 miles from the head of this bay.

The *Albatross* in leaving Uyak Bay gave both shores a good berth and anchored for a few hours off Little River, just westward of Cape Ugat. **Cape Ugat** is a high ridge sloping in irregular form and rather abruptly to a low rocky shelf which projects into the straits forming the pitch of the cape. The cape is easily recognized by an outlying high conical rock, grass-covered on top, and having a second small rock lying outside of it. It is said that the small cannery steamers pass between the high rock and the cape.

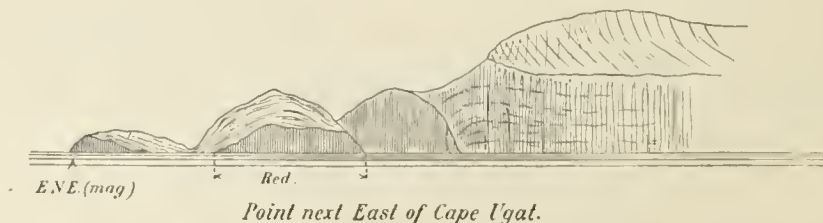


The chart of Uganuk Bay is so different from the actual features that in the absence of a cartographical guide I hesitate to describe such features as come under my notice for fear of adding confusion. Our time only permitted a reconnoissance of the head of the western bay, and by referring to it some idea may be gained of the chart errors.

Uganuk Bay is a large body of water lying between Uganuk Island and the peninsula of which Cape Ugat is the extreme end. From the lower or southeast end an irregular mountain mass projects into the bay, dividing it into what I have called East and West Uganuk bays. The latter has three arms: the first, making to the eastward about 3 miles within the extreme point separating the bays, which we have called the Northeast Arm; the second, about 4 miles beyond, has a general east and west direction and is about 4 miles long and 1 mile wide at the entrance, but the upper half is entirely obstructed by great tidal flats which are almost entirely uncovered at low water: this we have called East Arm. The third branch is the southern extension of the bay and is about 4 miles long and $\frac{3}{4}$ mile wide; we have called it South Arm. From the head of West Uganuk Bay there is a passage around the southern end of Uganuk Island, but it is said to be navigable for boats only.

The *Albatross* entered the bay from the westward and kept about $1\frac{1}{2}$ miles from the western points or headlands, until the western bay was reached, when a mid-channel course was held, leaving all the islands in the lower part of the bay to the westward.

After rounding Cape Ugat the first point seen on the western shore terminates in two island-like knobs, the inner one conical with a reddish bluff, the outer one lower and flatter, and both grass-covered on top. When the point comes abeam it is seen to be crescent-shaped, curving to the southward, forming a shallow-looking bay, and having a few outlying rocks.

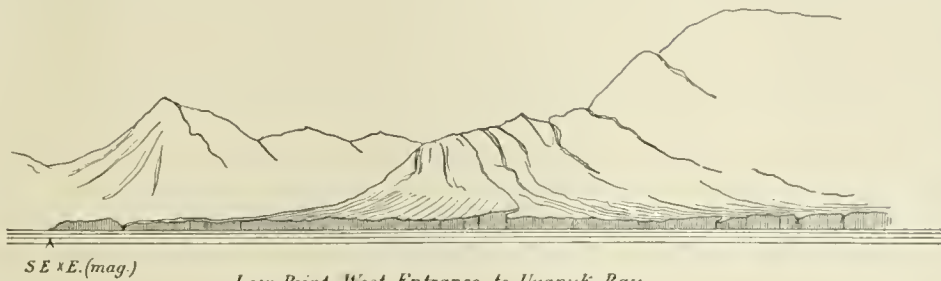


The next point seen making from the western shore is flat and low, covered with grass and alder clumps, with low dark bluffs on the northern and western shores. It slopes back gently to a high hill with steep and rugged sides, the end of a short uneven ridge. This



NATIVE VILLAGE, UGANUK BAY, KADIAK ISLAND.

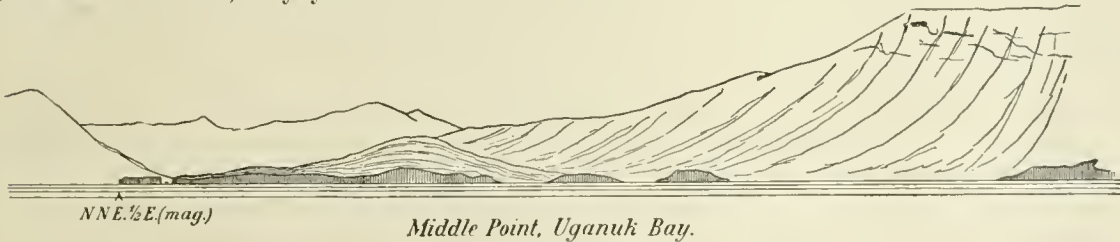
point seems to be the true western entrance point to the bay. It has two large rocks slightly detached from the shore.



On rounding this point the western bay fully opens, and near the head of it, on the western side, is seen what appears to be a long, low, undulating point, which upon nearer approach is made out as the cluster of rocky islets lying off the native village of Uganuk.

I find that I failed to describe what we called **West Point** on the reconnoissance, but it is not prominent. I recall, in coming out of the bay, we attempted to cut in points ahead, and recognized West Point from the small detached rock, but when it was projected against the land, neither the point nor the rock could be recognized.

East Point, on our reconnoissance, is the middle point separating East and West Uganuk bays, and is the northwest extremity of a long, high, level ridge with steep sides, as seen from West Uganuk Bay. From the top of the ridge to the point the slope is gentle and even, and off the point, which is low, are several large rocks, the larger one having a flat top with bluff sides. The point is grassy, with alder clumps. The shore extending from the point southward has low, clayey bluffs.

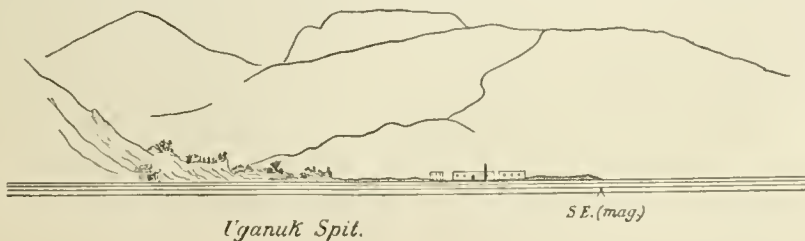


Off Rock Point, which forms the southern point of entrance to Northeast Arm, are several rocks, and from this point to East Arm is a long line of high bluffs, which are the lower extensions of the high mountain masses to the eastward.

Village Islands, lying off the old native village of Uganuk, on the western side of the bay, are all high and rocky and on the channel side seem bold-to. Village Peninsula is a rocky head and an island at high water. There is probably a good anchorage for moderate-sized vessels in the harbor formed by the islands and the peninsula. No specific examination was made of these waters, but at the village a white man said that it was clear of dangers.

The village is a collection of 12 or 15 barabaras, with a winter population of 30 or 40 Aleuts. In summer these natives inhabit the village on the right bank of the river emptying into the head of the East Arm.

Uganuk Spit forms the northern point of entrance to East Arm. In approaching it from the northwest at a distance it appears like a long, low spit, projecting into West Uganuk Bay, with the cannery buildings on the outer point. Upon nearer approach it is found to be a wide shingle beach making out from the bluffs, the height of the latter giving it a spit-like appearance. At the base of the bluffs is a small lagoon.



The cannery anchorage is off the outlet to the lagoon in 14 to 16 fathoms, soft bottom. In this position the Noisy Islands, at the entrance to the main bay, are seen across the point of the spit. A better anchorage, in from 8 to 10 fathoms, may be found a mile farther up the arm off the saltery. (See survey.) About $\frac{1}{2}$ mile beyond the saltery extensive tidal flats fill the head of the arm for a distance of about 2 miles to the mouth of the stream.

The surrounding country is very mountainous, and it is said in winter the winds from the southwest are very violent. There is also more rain and mist here than in the neighboring localities, caused probably by the high mountain systems near by.

There is a saltery, now closed, on the southern side of the **East Arm** over 1 mile within the entrance, and at the head of the arm is the mouth of the outlet to a lake which is 8 miles from the mouth. The cannery on the spit receives its fish from the head of the arm.

South Arm is the extension of West Uganuk Bay to the southward, and is about 4 miles long by $\frac{3}{4}$ mile wide, with a dog-salmon stream at the head. No specific examination was made of this arm except to traverse it in going to and from the salmon stream. The only danger noticed was a ledge uncovered at low water lying about 150 yards off the eastern shore, $\frac{1}{2}$ mile south of Mink Point, or between Mink Point and an arch rock which lies off the next point within the entrance.

The banks of the stream during summer are infested with bear, and in using the bear trails care must be taken, as the Aleuts frequently have well-concealed bear traps over them.

The *Albatross* upon leaving Uganuk made a few soundings, but as there are no located features from which a position could be obtained they have not been sent in. A mid-channel course was pursued and the depths ranged from 80 to a little under 100 fathoms, except in mid-channel on a course **NW. $\frac{1}{4}$ W.** with the highest part of Noisy Island abeam, distant about 2 miles, where 31 fathoms depth was obtained.

From a point 2 miles outside of Noisy Island, a course of **N. $\frac{1}{2}$ W.** carried the *Albatross* into Cook Inlet.

I would suggest in this connection that in addition to the reconnaissance surveys made by the *Albatross* in 1897, the Coast Survey might find some additional information upon which to base corrections in Fish Commission Bulletin, Volume IX, of 1889. Alitak and Olga bays might be used, as the representation on chart 8500 is much in error.

The *Albatross* went from Kodiak (St Paul) to Karluk by what might be called the inside passage; that is, through Usinka Narrows, Whale Passage, Karluk Strait, and Shelikof Straits. I would, however, not recommend this passage to anyone not thoroughly acquainted. The temptation to use this passage is very great, as the route around Afognak Island or the southern end of Kodiak Island is long and not free from danger. I am unable to describe this route, as I passed through but once, and then my whole attention was upon the careful navigation of the vessel, but in general terms the run can be indicated:

Upon leaving Kodiak by the northern channel, it is said that by keeping the water-front of the village open of intervening points all dangers are avoided. The *Albatross*, after rounding St. George Rocks, stood up midway between Spruce Island and Kodiak Island. There seem to be no dangers in mid-channel until the western end of **Usinka Narrows** are reached; here the channel is very much contracted, first by the small island which lies off Usinka village, and next by the western point of Spruce Island and a point opposite on the Kodiak Island side. In passing through these narrows, sufficient speed only to keep good control of the vessel should be maintained. Keep a careful mid-channel course, leaving the small island to the northward, and after passing the western point of Spruce Island the most critical part of the run is encountered.

The route now lies between a small islet in a bight on the Kodiak Island shore, and a shelving kelp reef which covers at high water. Favor the islet side, and when through haul off a little from the next point on the Kodiak Island side. In passing through these narrows several vessels have struck and have been damaged, and in two instances the vessels were in charge of men well acquainted in the locality; but it is said that if a careful mid-channel course is kept there are no dangers, and that the vessels that struck were not in mid-channel.

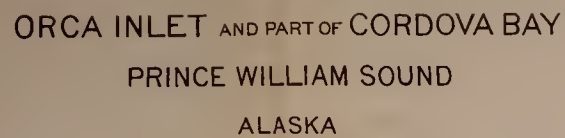
Between Afognak Island and Kadiak Island on the eastern side is a large island known as Whale Island. Afognak Straits lie around the northern side, and Whale Passage around the southern side. The former is much obstructed, the latter clear. The *Albatross* passed through Whale Passage.

After passing Usinka Narrows and rounding the next point on the Kadiak Island side, head for the southern end of Whale Island and enter the passage between the rock in mid-channel, which covers at high water and lies just within the entrance, and the southern point of the island. A grass-topped islet with a long reef and outlying rocks making to the eastward is now seen ahead, lying midway between Whale Island and Kadiak Island. Keep the Whale Island shore on board, push boldly through, keeping midway between the islet and Whale Island, favoring the latter. Except at slack water this passage has a very uninviting appearance; the current is strong and runs in swirls, so that a constant watch must be kept to keep the vessel pointed fair. I made particular inquiries in relation to this passage and was told that, except the reefs and rocks making off from each end of the islet in the direction of the channel, there are no dangers.

Do not change the course until well past Whale Island, as a reef of sunken rocks lies off the next point on the Kadiak Island shore, and for the same reason do not approach the southeast point of Raspberry Island, as a sunken reef extends from it on the channel side. A careful mid-channel course should be kept until well past the southeast part of Raspberry Island, when all dangers seem to be passed. After clearing the straits a course may be laid around Uganuk Head.

HAJJI

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U.S.F.C.S. ALBATROSS

Lieutenant Commander J. F. Moser, U.S.N., Commanding

August, 1897

Astronomical Station, {LATITUDE, 60° 35' 42" N
{LONGITUDE, 145° 42' 23" W

Longitude referred to Sitka

Soundings in fathoms

Scale, 2000

MAUTHCA, WILES

APPROVED:
Jeffie F. Moser.
LIEUTENANT COMMANDER, U.S. COAST GUARD

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Published at Washington
Mar 2 1990
AT THE U.S. COURT AND CLERK'S OFFICE

Authorities

Astronomical observations by Lieutenant L M Garrett, U.S.N.

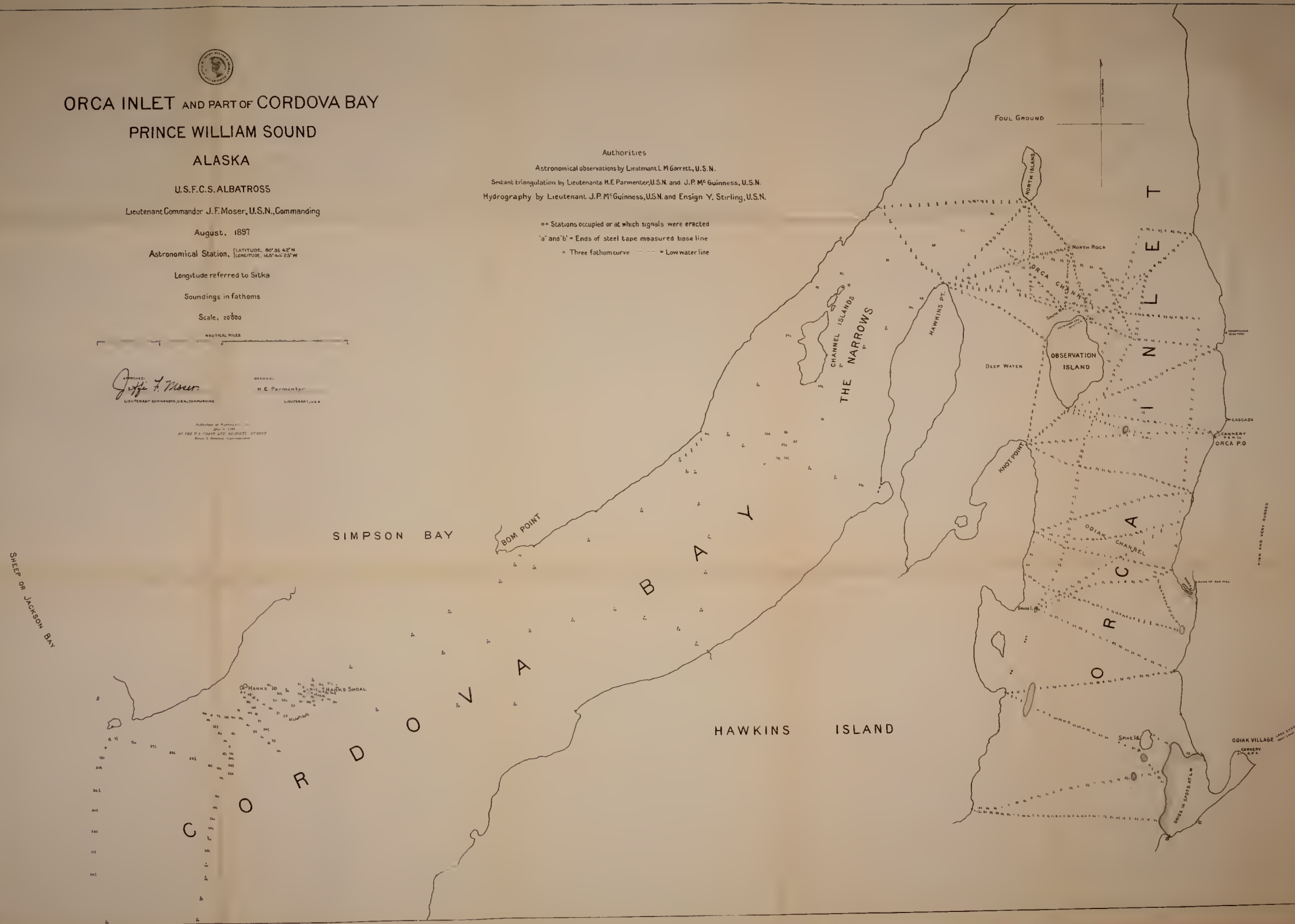
Sextant triangulation by Lieutenants H.E. Parmenter, U.S.N. and J.P. McGuinness, U.S.N.

Hydrography by Lieutenant J.P. McGuinness, U.S.N. and Ensign Y. Stirling, U.S.N.

* Stations occupied or at which signals were erected

'a' and 'b' = Ends of steel tape measured base line

= Three fathom curve - - - = Low water line





CHIGNIK BAY WESTERN ALASKA

Sketch by the officers of the

U. S. F. C. S. ALBATROSS

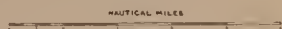
Lieutenant Commander J. F. Moser, U. S. N. Commanding

August, 1897

Anchorage Bay and Chignik Lagoon by sextant triangulation
Doris Bay from U. S. C. & G. S. Chart No. 8891.

Soundings in fathoms

Scale, 80000

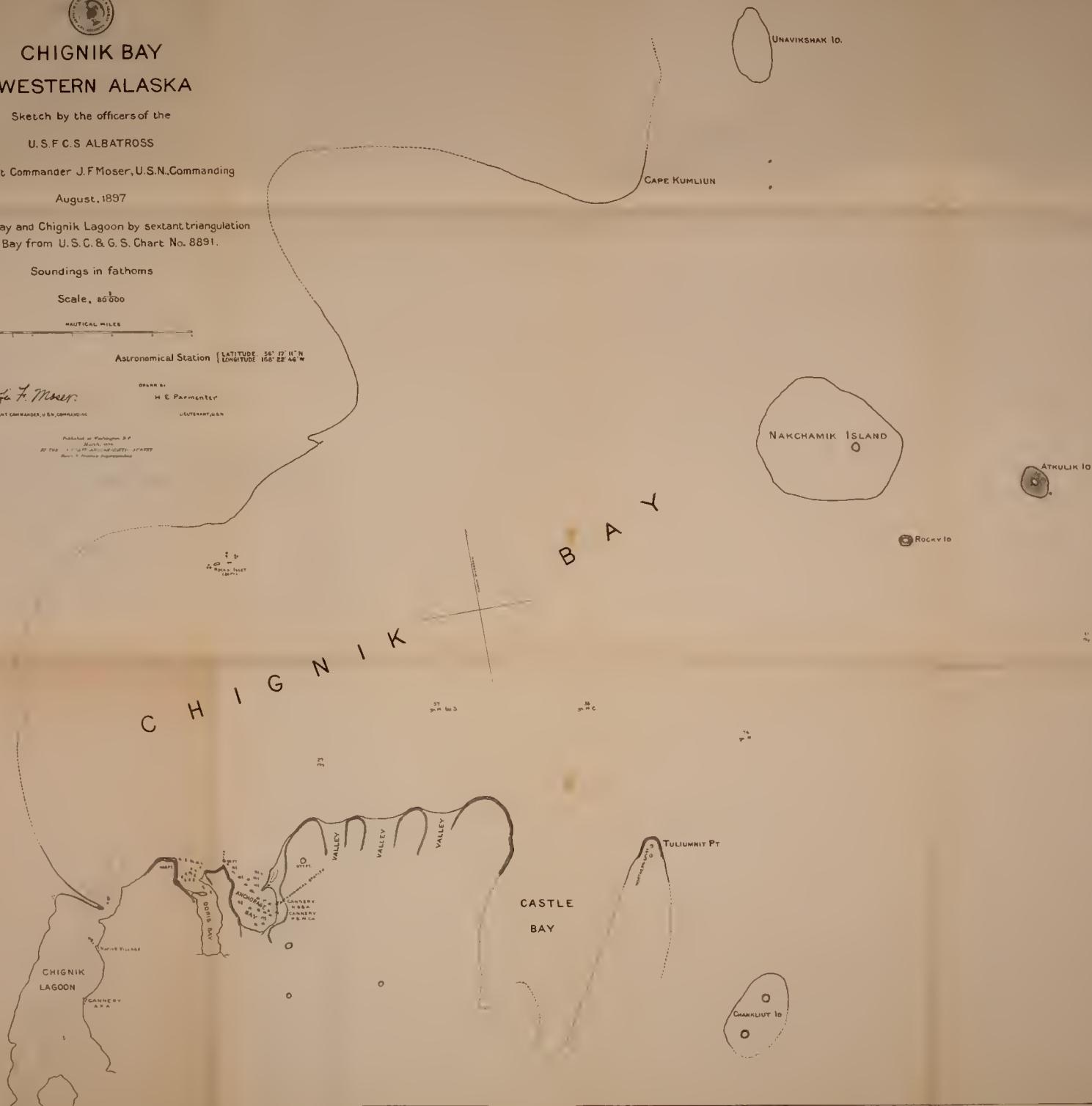


Astronomical Station (LATITUDE 58° 12' 11" N
LONGITUDE 156° 22' 46" W)

APPROVED
Jeffrey F. Moser
LIEUTENANT COMMANDER, U. S. N. COMMANDING

DRAWN BY
H. E. Parmenter
LIEUTENANT, U. S. N.

Published at Washington, D. C.
March, 1898
BY THE U. S. COAST AND GEODETIC SURVEY
Under the direction of the Chief of Survey





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High

[illegible]

U.S.F.C.S. ALBATROSS

Lieutenant Commander J. F. Moser, U.S.N., Commanding

August, 1897

Soundings in fathoms

Scale, 10000

NAUTICAL MILE

Published at Washington D.C.
March 1958
AT THE U.S. GOVT. PRINTING OFFICE
Harry S. Phillips, Superintendent

APPROVED:
Jesse F. Mower.
LIEUTENANT COMMANDER U.S.N. COMMANDER

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Authorities

Sextant triangulation by Lieutenants H.E. Parmenter, U.S.N., and J.P. McGuinness, U.S.N.

Hydrography by Ensign Y. Stirling, U.S.N.

• = Stations occupied or at which signals were erected

*a' and *b' = Ends of steel tape measured base line.

• Three fathom curve • Low water line



KADIAK ISLAND

BEAR
ISLAND

O-
HARVESTER

ISLAND

O-

UYAK ANCHORAGE

UYAK ANCHORAGE
UYAK BAY, KADIAK ISLAND
ALASKA

U.S.F.C.S. ALBATROSS

Lieutenant J. F. Mearns, U.S.N., Commanding

August 1897

Actual State of the Sky

Longitude referred to U.S.N. Station

Soundings in fathoms

Water depth

Barometric

UYAK BAY SHEET SHOWING RELATIVE POSITION OF UYAK ANCHORAGE AND LARSENS BAY

Scale 1:100,000

1:100,000

SHELIKOF STRAIT

UYAK

KADIAK

ISLAND

BAY

Author: T. P. S.

Astronomical observations by Lieutenant J. M. Garrett, U.S.N.

Sealant triangulation by Lieutenant H. E. Permonier, U.S.N.

Hydrography by Ensign Y. Sterling, U.S.N.

• Stations occupied or at which signals were erected

• and •• Ends of shore tape measured base line

• Three fathoms curve •• One fathom curve

John H. Mearns
Lieutenant, U.S.N.

made by
• E. P. Mearns



LARSENS BAY

UYAK BAY, KADIAK ISLAND

ALASKA

U.S.F.C.S. ALBATROSS

Lieutenant Commander J. F. Moser, U.S.N., Commanding

August, 1897

Soundings in fathoms

Scale, 10000

NAUTICAL MILE

Authorities

Sextant triangulation and hydrography by Lieutenant J. P. McGuinness, U.S.N.

•• Stations occupied or at which signals were erected

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- Three fathom curve. - Low water line

APPROVED:
J. F. Moser
LIEUTENANT COMMANDER U.S.N., COMMANDING

DRAWN BY:
H. E. PARMELEE
LIEUTENANT, U.S.N.

Published at Washington, D.C.
March, 1898.
BY THE U.S. NAVY AND HYDROGRAPHIC SURVEY
Under the direction of the Chief of the Bureau of Hydrography



UGANUK BAY KADIAK ISLAND ALASKA

U.S.F.C.S. ALBATROSS

Lieutenant Commander J. F. Moser, U.S.N., Commanding

August, 1897

Astronomical Station, (Latitude, 57° 42' 32" N
Longitude, 153° 31' 13" W)

Longitude referred to Sitka

Soundings in fathoms

Scale, 1:1000

Natural Scale

Drawn by

H. E. Parmelee, Jr.

Hydrographer, U.S.N.

John F. Moser
Lieutenant Commander, U.S.N.

Published by the Hydrographic Office, Washington, D.C.

No. 1007 (1:1000) and 1:10000 (1:10000)

Scale, 1:10000

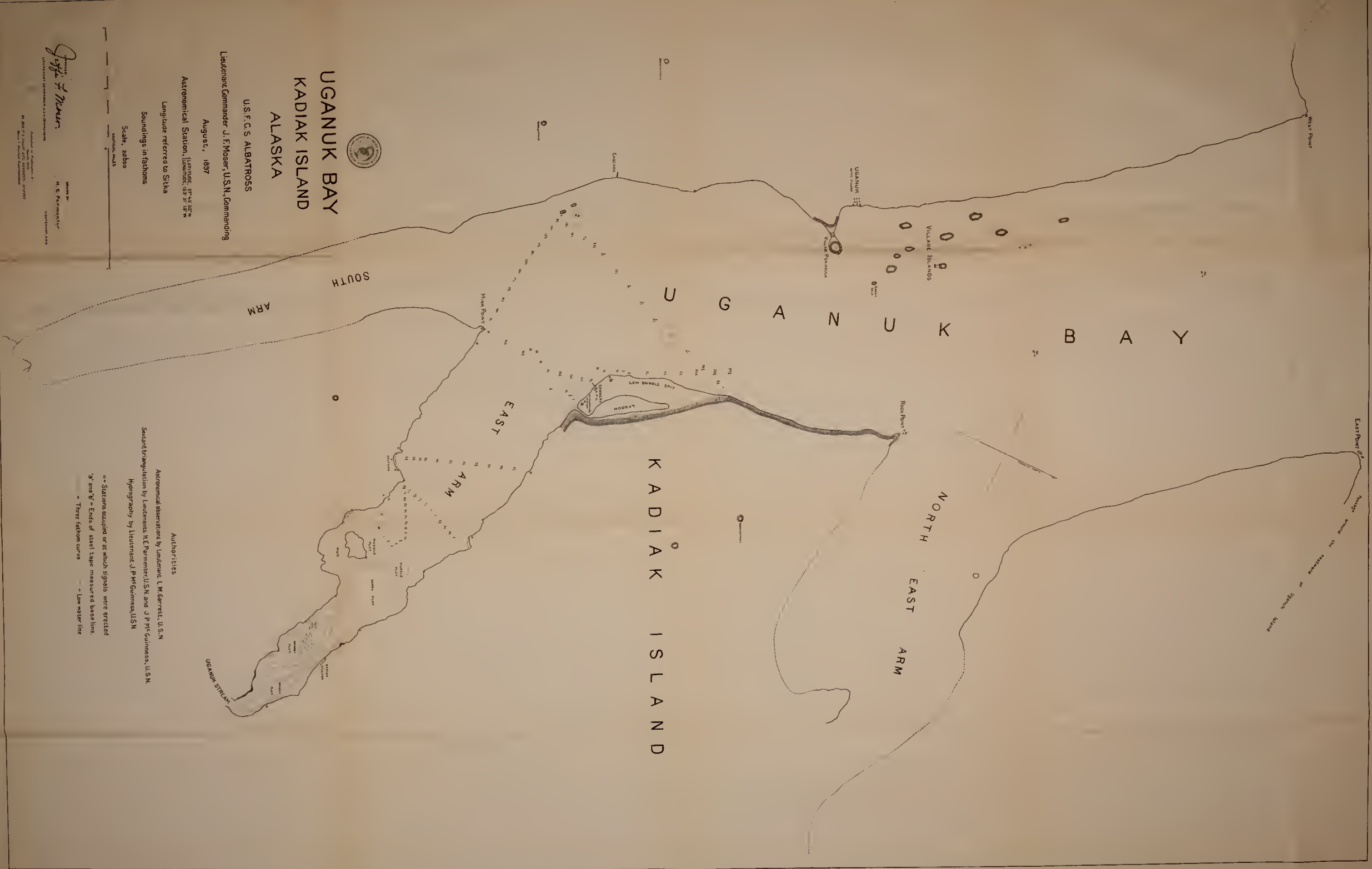
Authorities

Astronomical observations by Lieutenant L. M. Garrett, U.S.N.

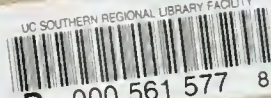
Satellite triangulation by Lieutenants H. E. Parmelee, U.S.N. and J. P. McGuire, U.S.N.

Hydrography by Lieutenant J. P. McGuire, U.S.N.

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- - - Three fathom curve - - - Low water line



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